**Topic: Digital Currency**

Reading Time: 15 mins

**·        Note\* Highlight important/core points while reading**

·        Read the content and write the answers given in the document in your words, to get the solid grip on topic.

**What is Digital Currency?**

Digital currency is a **form of money that exists only in electronic form**. Unlike physical cash (banknotes and coins), digital currencies are stored in **digital wallets** and used for transactions through the **internet**.

There are **two main types** of digital currency:

1. **Traditional Digital Currency** (regulated by governments and banks)
2. **Cryptocurrency** (decentralized and based on blockchain technology)

**Fiat Currency and Central Banking System**

**1. Fiat Currency**

* **Fiat currency** is **government-issued** money (e.g., USD, GBP, EUR).
* It is **not backed by a physical commodity** like gold or silver.
* The **value of fiat currency** is determined by the **government and central banks** based on economic conditions.

**2. Central Banking System**

* The **central bank** (e.g., Federal Reserve, European Central Bank) controls fiat currency.
* It **regulates inflation, interest rates, and money supply** to stabilize the economy.
* **Traditional digital currencies** (like online banking transactions) are controlled by the **central banking system**.

**Cryptocurrency and Its Differences from Traditional Digital Currency**

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| --- | --- | --- |
| **Feature** | **Traditional Digital Currency** | **Cryptocurrency** |
| **Control** | Central banks & governments regulate transactions. | Decentralized; controlled by a peer-to-peer network. |
| **Transparency** | Transactions are private between banks and users. | Transactions are **publicly recorded** on a blockchain. |
| **Security** | Banks use centralized databases (vulnerable to hacking). | Uses **blockchain technology** for high security. |
| **Transaction Speed** | Can take hours or days (especially for international transactions). | Faster transactions (sometimes in minutes). |
| **Tracking & Monitoring** | Banks track and control all transactions. | Transactions are **anonymous but publicly visible** on a blockchain. |

**How Cryptocurrency Works**

**1. Use of Cryptography**

* Cryptocurrency uses **cryptographic techniques** to **secure transactions**.
* Each transaction is verified using **complex mathematical algorithms**.

**2. Decentralization**

* Unlike traditional currency, cryptocurrency **is not controlled by any central authority**.
* The **community** (miners, developers, and users) decides the rules.

**3. Blockchain Technology**

* Cryptocurrency operates on a **blockchain**, which is a **decentralized ledger**.
* Every transaction is **recorded on multiple computers** (nodes), making it **highly secure and tamper-proof**.

**4. Transparency & Security**

* Every cryptocurrency transaction is **publicly recorded**, preventing fraud.
* Blockchain ensures that transactions **cannot be altered** once verified.

**A-Rated Questions/Answers By Examiner**

**Q1: What is digital currency?**

**Answer:**Digital currency is a form of money that exists **only in electronic form**. It includes:

* **Traditional digital currency** (controlled by banks and governments).
* **Cryptocurrency** (decentralized and based on blockchain).

**Q2: How is cryptocurrency different from traditional digital currency?**

**Answer: Cryptocurrency is decentralized**, while traditional digital currency is **controlled by central banks**.

* **Cryptocurrency transactions are public** (on a blockchain), but **bank transactions are private**.
* **Cryptocurrency has no government control**, while traditional digital currency is **regulated by financial institutions**.

**Q3: What is the role of cryptography in cryptocurrency?**

**Answer:**Cryptography is used to:

1. **Secure transactions** and prevent fraud.
2. **Verify ownership** of cryptocurrency.
3. **Ensure data privacy** through encryption.

**Q4: What is blockchain, and how does it secure cryptocurrency?**

**Answer:**Blockchain is a **decentralized, digital ledger** that records all cryptocurrency transactions. It ensures security by:

1. Storing data **across multiple computers** (making it tamper-proof).
2. **Verifying each transaction** through cryptographic algorithms.
3. Preventing **fraud and double-spending**.

**Q5: Why do some people prefer cryptocurrency over fiat currency?**

**Answer:**People prefer cryptocurrency because:

1. **It is decentralized** (not controlled by governments).
2. **Transactions are fast** and global.
3. **It is more secure** due to blockchain technology.
4. **It provides financial privacy** and prevents third-party interference.

### Write your Answers on your Notebook and Verify it on Next Screen

**Q6: What are the advantages of digital currency over physical cash?**

**Q7: What are some common uses of cryptocurrency?**

**Q8: What are the risks associated with cryptocurrency?**

**Q9: What is the difference between Bitcoin and Ethereum?**

**Q10: What are stablecoins, and how do they work?**

**6. Answer:**

1. **Convenience** → Digital currency allows instant online transactions without handling physical money.
2. **Security** → Reduces the risk of theft or loss compared to carrying cash.
3. **Global Transactions** → Enables cross-border payments with minimal fees and faster processing times.
4. **Efficiency** → Streamlines financial transactions, reducing reliance on physical banking infrastructure.
5. **Tracking & Transparency** → Digital transactions create records that can help prevent fraud and enhance accountability.

**7. Answer:**

1. **Online purchases** → Many businesses accept cryptocurrencies as payment (e.g., Tesla, Microsoft).
2. **Investment** → People buy cryptocurrencies as an asset, hoping for long-term value appreciation.
3. **Remittances** → Sending money across borders without high fees or long processing times.
4. **Decentralized finance (DeFi)** → Allows users to earn interest, lend, and borrow without banks.
5. **Smart contracts** → Automates agreements without intermediaries (e.g., Ethereum blockchain).

**8. Answer:**

1. **Volatility** → Prices can fluctuate rapidly, leading to financial losses.
2. **Lack of regulation** → No central authority to protect users from fraud or scams.
3. **Security risks** → If a wallet's private key is lost or stolen, funds cannot be recovered.
4. **Illegal activities** → Some criminals use cryptocurrency for money laundering or illicit transactions.
5. **Scalability issues** → Some blockchains struggle with high transaction volumes, leading to delays and high fees.

**9. Answer:**

**Answer:**

| **Feature** | **Bitcoin** | **Ethereum** |
| --- | --- | --- |
| **Purpose** | Digital currency | Smart contracts & decentralized apps (dApps) |
| **Blockchain** | Bitcoin blockchain | Ethereum blockchain |
| **Transaction speed** | Slower (10 minutes per block) | Faster (seconds to minutes) |
| **Smart contract support** | No | Yes |
| **Supply limit** | 21 million coins | No fixed limit |

**10. Answer:**

1. **Stablecoins** are cryptocurrencies designed to maintain a stable value by being pegged to an asset like the US dollar or gold.
2. **Types of stablecoins:**
   * **Fiat-backed** → Supported by real-world currency (e.g., USDT, USDC).
   * **Crypto-backed** → Backed by other cryptocurrencies as collateral (e.g., DAI).
   * **Algorithmic** → Uses smart contracts to control supply and maintain price stability.
3. **Use cases:** Stablecoins are used for payments, trading, and remittances without volatility.